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AMSAT NEWS SERVICE
ANS-089

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

In this edition:

* FUNcube-1 / AO-73 Transponder Test – March 29
* Eighth Annual AMSAT/TAPR Banquet Speaker Announced
* AMSAT Awards Announced
* Radar outage prompts delay of Falcon 9 launch
* Lithuanian President’s greetings message sent from space
* PRN codes for KickSat Sprites released
* New frequency for Ukrainian PolyITAN-1 CubeSat
* Upcoming AMSAT Events
* ARISS News
* Satellite Shorts from All Over

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ANS-089 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 089.01
   From AMSAT HQ SILVER SPRING, MD.
March 30, 2014
To All RADIO AMATEURS
BID: $ANS-089.01

FUNcube-1 / AO-73 Transponder Test – March 29

Results of last weekend’s tests: the transponder was maintained ON for two orbits, and we did not see any noticeable fall in battery temperature.

We are therefore proposing to repeat the test on Saturday, March 29, but leave the transponder on for a longer period. We will switch it on during the first pass over the UK (approx 10:30 UT) and switch it off during one of the evening passes over UK, the first of which is at approx 20:00 UT.

We are particularly interested to receive TLM when the satellite is coming out of eclipse (i.e. when it should be at its coldest temperature). So reception from suitably located stations would be very welcome.

FUNcube website
http://www.funcube.org.uk/

FUNcube Yahoo Group
http://amsat-uk.org/funcube/yahoo-group/

FUNcube Forum
http://forum.funcube.org.uk/

[ANS thanks AMSAT-UK for the above announcement]

Eighth Annual AMSAT/TAPR Banquet Speaker Announced

The eighth annual AMSAT/TAPR Banquet will be held on Friday night, May 16. This dinner is always a highlight of the AMSAT (Radio Amateur Satellite Corp.) and TAPR (Tucson Amateur Packet Radio) activities during the Dayton Hamvention.

This year's speaker will be Dr. Tom Clark, K3IO, 'Sixty Years a Slave (to Amateur Radio)'.

Tom received his Ph.D. in Astro-Geophysics from the University of Colorado, served as Chief of the Astronomy Branch at NASA Marshall Space Flight Center, was a Senior Scientist at NASA Goddard Space Flight Center, has been active in both AMSAT and TAPR, and holds an Extra Class license. Along with Bob McGwier, N4HY he developed the first amateur DSP hardware, including a number of modems. He developed the uplink receivers and the spacecraft LAN architecture used on all the Microsats (Oscars 16, 17, 18, 19, 26, 27 and 31). Tom was inducted into the initial class of CQ Magazine's Amateur Radio Hall of Fame in 2001. Professionally, he is a Fellow of the American Geophysical Society and the International Association of Geodesy. In 2005 he was the first non-Russian to be awarded the Special Medal of the Russian Academy of Sciences for his contributions to the international Very Long Baseline Interferometry network.

Tickets ($30 each) must be purchased online by May 13th on the AMSAT website at www.amsat.org through the AMSAT Store tab.
Tickets will not be sold at the Hamvention or at the door.
Tickets purchased online may be collected at the AMSAT booth (433-435, 444-446).
The Banquet will take place at the Kohler Presidential Banquet Center, 4572 Presidential Way, Kettering, OH 45429 (just south of Dayton). The cash bar will open at 1830 EDT, with the dinner commencing around 1900 EDT.

[ANS thanks Steve Belter, N9IP for the above announcement]

AMSAT Awards Announced

Here is our latest induction into some of the AMSAT awards community.

The following have entered into the Satellite Communicators Club for making their first satellite QSO.
Alan Ehrenberg, N9EDV
Benjamin Gaston, KV4RH
Scott Medbury, KD5FBA
Doug Birky, KB8M
Richard Manderski, W2SKI
Eric Stapleton, VA7TU

The following have earned the AMSAT Communications Achievement Award.
Richard Manderski, W2SKI, #562

The following have earned the South Africa Satellite Communications Achievement Award.
Richard Manderski, W2SKI, #US190

To see all the awards visit http://www.amsat.org or http://www.amsatnet.com/awards.html

[ANS thanks Bruce Paige, KK5DO for the above announcement]

Radar outage prompts delay of Falcon 9 launch

SpaceX's launch of a cargo resupply mission to the International Space Station has been delayed from Sunday after a critical U.S. Air Force rocket tracking radar was knocked offline, officials said late Wednesday.

The radar is part of the Air Force-run Eastern Range, a network of tracking, communications and safety assets stretching from Florida into the Atlantic Ocean.

Sources said Air Force officials are trying to repair the radar after a fire damaged it. The radar is located near Cape Canaveral, but an Air Force spokesperson did not respond to multiple inquiries on the nature of the problem and how long it would take to fix.

The radar outage already forced United Launch Alliance to delay the launch of an Atlas 5 rocket with a classified National Reconnaissance Office payload to no earlier than April 10. Liftoff of the Atlas 5, which was already rolled out to the launch pad, was scheduled for Tuesday.

Engineers will return the Atlas 5 rocket to its nearby integration building Thursday to wait for another launch attempt.

A new target launch date for SpaceX's Falcon 9 rocket was not

available late Wednesday, but a company spokesperson confirmed the Air Force would be unable to support a launch attempt Sunday night.

Engineers had analyzed differences between the Atlas 5 and Falcon 9 rocket, including the configurations of the launch pads and the speed at which the launchers take off, to see if the boosters could fly without the damaged radar, a source said.

The SpaceX cargo resupply flight to the space station must be scheduled around other visiting vehicles. A Russian Progress cargo spacecraft is set to launch and dock to the space station April 9, so any delay of more than a few days will likely cause the SpaceX launch to slip to mid-April, at the earliest.

The Falcon 9 launch was previously delayed from March 16 to review contamination on thermal blankets inside the Dragon spacecraft's unpressurized cargo bay. SpaceX says the review showed the blankets were acceptable to fly without changes.

The Dragon spacecraft will deliver 2.4 tons of equipment to the space station.

Most of the payloads are packed inside the Dragon's pressurized cabin, including 1,576 pounds of science and research equipment, 1,049 pounds of crew supplies, 449 pounds of vehicle hardware, and 271 pounds of spacewalk tools.

The space station crew will unload the gear inside the Dragon spacecraft's internal module.

Two larger payload packages inside the Dragon's unpressurized section will be removed and stowed on the space station using the outpost's Canadian robotic arm and Dextre robot.

The optical communications and high-definition video systems carried inside the Dragon's external trunk are the first large unpressurized NASA experiments assigned for delivery to the space station by SpaceX.

The Dragon spacecraft is expected to remain attached to the space station for about one month.

The cargo delivery mission is SpaceX's third operational resupply flight under a $1.6 billion contract with NASA covering 12 missions through 2016.

(ANS thanks Stephan Clark, Spaceflightnow.com for the above article)

Lithuanian President’s greetings message sent from space

A greetings message from the President of the Republic of Lithuania Dalia Grybauskaite, has been transmitted by the amateur radio satellite LituanicaSAT-1. She is believed to be the first President of any nation to have a greetings message sent from space since President Eisenhower in 1958.

In 2013 the President of the Republic of Lithuania, Dalia Grybauskaite. visited the Science Communication and Information Center (SCIC) at Vilnius University. There she saw the amateur radio

CubeSat LituanicaSAT-1. Using a handheld radio and the call sign LY5N she transmitted through the satellite's FM voice transponder.

Her words "Greetings to all Lithuanians around the world" were recorded on a memory chip in the satellite and the message was successfully transmitted from space on March 22, 2014 at 04:17:38 UT.

LituanicaSAT-1 was launched to the International Space Station (ISS) on January 9, 2014 and was deployed with other amateur radio satellites on February 28.

The tiny satellite is just 10x10x10 cm with a mass of 1.090 kg yet it has a VGA camera and a 145/435 MHz FM voice transponder, designed and built by Lithuanian radio amateurs.

The prototype of the FM repeater has been operating in the home of its designer Žilvinas Batisa LY3H in Elektre.nai, Lithuania. Further information at http://ly3h.epalete.com/?p=303

LituanicaSAT-1 CubeSat
http://amsat-uk.org/2014/02/27/lituanicasat-1-cubesat/

[ANS thanks AMSAT-UK for the above announcement]

PRN codes for KickSat Sprites released

Zac Manchester KD2BHC has posted another update on the KickSat CubeSat which will carry 104 tiny Sprite satellites into a 325×315 km 51.5 degree inclination orbit. The launch will be broadcast live on NASA TV, which will also be streaming on Ustream.

UPDATE: The launch has been postponed, see
http://spaceflightnow.com/falcon9/009/140327delay/

For latest date check
http://spaceflightnow.com/tracking/

The primary launch date for the SpaceX Falcon 9 CRS 3 mission from the Kennedy Space Center scheduled for March 31 at 0250 GMT has been cancelled, no new launch date has been set.

Zac says "Since a laptop can only decode one or two Sprite signals at a time, I've also been busy getting our radio upload page set up so that you can record a pass without having to decode it in real-time, upload the .wav file, and have all 104 Sprite signals decoded on our server with the results emailed back to you. This will also help our team collect as much data as possible from around the world. The page will be live before launch."

All of the 104 Sprite satellites transmit on the same frequency. Each Sprite has a unique pair of Pseudo-Random Number (PRN) codes that it encodes its transmissions with, allowing a receiver to tell the Sprites apart (this is known as CDMA). A list of all Sprite PRN codes codes is available at

https://docs.google.com/spreadsheet/ccc?key=0ArAGbHISj5okdEhBbkZiWGxBSjNmcEs4ZkgwMmNsUEE&usp=sharing

KickSat Google Group
https://groups.google.com/forum/#!forum

KickSat Sprite Ground Station by Andy Thomas G0SFJ
http://kicksat.wordpress.com/support/kicksat-ground-station/

British Interplanetary Society: Sprite Technical Summary
http://www.bis-space.com/2013/03/09/9301/kicksat-technical-summary

KickSat Amateur Radio Information
https://github.com/zacinaction/kicksat/wiki/Radio-Info

Setting up a ground station
https://github.com/zacinaction/kicksat/wiki/Setting-Up-A-Ground-Station

Watch a video of the planned deployment at
http://amsat-uk.org/2014/03/03/mass-launch-of-437-mhz-satellites/

[ANS thanks AMSAT-UK for the above information]

New frequency for Ukrainian PolyITAN-1 CubeSat

The IARU Satellite Frequency Coordination Panel have announced a new frequency for the Ukrainian amateur radio CubeSat PolyITAN-1, planned to launch from Yasny in Russia.

IARU say the new frequency of 437.675 MHz was needed to avoid interference occurring with another spacecraft on the same launch.

PolyITAN-1 was built by students at the Kiev National University “KPI” in cooperation with the Ukrainian ham radio community.

The mission is to launch Ukrainian educational satellite build by KPI students and space exploration enthusiasts. Specific mission targets are:
• Develop, build, test, launch and operate a Ukrainian small satellite platform based on the CubeSat standard.
• Conduct mission experiments with following payloads:
. o Sun sensor
. o Attitude position and orientation system including system software
. o Test on-board GLONASS/GPS navigation subsystem
• Build ground segment infrastructure for satellite communication
• Develop and test onboard and ground telecommunication software, implement telecommunication protocols
• Establish cooperation between educational institute, space agency(s) and various government authorities, Ham radio community

PolyITAN-1 is a 1U CubeSat which will have a 1200 bps AFSK AX25 600 mW downlink on 437.675 MHz. It will also have a CW beacon (EM0UKPI).

Architecture Design of PolyITAN-1
http://congress.cimne.com/eucass2013/admin/files/fileabstract/a272.pdf

PolyITAN-1 in Google English http://tinyurl.com/PolyITAN-1
Original text http://amsat.at.ua/

UY2RA Blog Post http://tinyurl.com/UY2RA-Blog-Post

[ANS thanks AMSAT-UK for the above information]

Upcoming AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

Saturday, 5 April 2014 – The Greater Baltimore Hamboree and Computerfest 2014, including the Maryland Emergency Preparedness Expo 2014, at the Maryland State Fairgrounds in Timonium MD. AMSAT will have a booth at this hamfest, and other AMSAT-related events may be planned.

Saturday, 5 April 2014 – Amateur Radio Club of Parker County's Weatherford Hamfest at the Central Christian Church in Weatherford TX (west of Fort Worth). AMSAT will have a table at this event, and there may be satellite demonstrations during the hamfest.

Monday, 28 April 2014 – presentation at Franklin County Amateur Radio Club meeting in Greenfield MA by Barry Baines WD4ASW (AMSAT President)

Saturday, 3 May 2014 – Cochise Amateur Radio Association's Larry Warren Hamfest in Sierra Vista AZ (southeast of Tucson) – AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Saturday, 7 June 2014 – Kachina Amateur Radio Club's White Mountain Hamfest in Show Low AZ (eastern Arizona, south of US-60/AZ-77/AZ-260) – AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Friday and Saturday, 13-14 June 2014 – Ham-Com in Plano TX (north of Dallas)

Thursday through Sunday, 17-20 July 2014 – ARRL Centennial Convention in Hartford CT. AMSAT will host a day-long Satellite Workshop on Thursday, and have a booth at the convention along with an AMSAT Forum and demonstrations throughout the convention.

Saturday and Sunday, 30-31 August 2014 – Shelby Hamfest in Shelby NC (west of Gastonia and Charlotte) – Barry Baines WD4ASW (AMSAT President) will host an AMSAT Forum on Saturday of this weekend

Friday through Sunday, 12-14 September 2014 – ARRL Southwestern Division Convention 2014 in San Diego CA (north of the city center, near Montgomery Field airport & I-805/CA-163 interchange) – AMSAT will have a booth at this convention, there will be on-air demonstrations using satellites throughout the convention, and a presentation on amateur satellites and AMSAT

AMSAT maintains and updated list of known upcoming events at
http://ww2.amsat.org/?page_id=218

[ANS thanks AMSAT-NA for the above announcement]

ARISS News

Recent Contacts:

A telebridge contact via W6SRJ with students at Melbourne Grammar School – Grimwade House, Caulfield, Victoria, Australia was successful Tue 2014-03-25 08:43:15 UTC 79 deg.
Astronaut Koichi Wakata, KC5ZTA answered 20 questions for students.

Melbourne Grammar School – Grimwade House is a co-educational Primary School with 650 students aged from 5 to 12 years old. Grimwade House bases its education on the Australian Curriculum. One of the Major Learning Areas outlined in the Australian Curriculum is Science. Grimwade House is fortunate to have a purpose built Science room and a teacher who is dedicated to and passionate about the teaching of Science. All students from Prep to Year 4 have one lesson of Science per week and Year 5 and Year 6 students have a double lesson of Science each fortnight.

Lesson topics:
- Students investigate features of the Earth's interior
- Students investigate the relative distances of the planets in our solar system
- Students investigate constellations seen in the night skies in the Southern Hemisphere
- Students investigate shadows and their relationship to light sources in Space
- Students investigate propulsion
- Students investigate insulation and other elements astronauts need to consider when exploring our place in Space.

Next planned event(s): Events will resume in April

There are no ARISS planned ARISS contacts due to crew schedules and resupply mission schedules.

ARISS is an international educational outreach program partnering the participating space agencies, NASA, Russian Space Agency, ESA, CNES, JAXA, and CSA, with the AMSAT and IARU organizations from participating countries.

ARISS offers an opportunity for students to experience the excitement of Amateur Radio by talking directly with crewmembers on-board the International Space Station. Teachers, parents and communities see, first hand, how Amateur Radio and crewmembers on ISS can energize youngsters' interest in science, technology, and learning. Further information on the ARISS program is available on the website
http://www.ariss.org/
(graciously hosted by the Radio Amateurs of Canada).

[ANS thanks ARISS for the above update]

Satellite Shorts from all over

Chichijima Island Satellite Operation Planned

Makoto, JI5RPT, will once again be active as JD1BLY from Chichijima Island (AS-031), Ogasawara, between April 27th and May 5th. Activity will be on 40-6 meters, including the satellites, using CW, SSB and the Digital modes (NO 6m EME). QSL via his home callsign JI5RPT. His log search will be available on his Web site at:
http://www.ji5rpt.com/jd1
He will also use Twitter to inform his real-time activities at:
http://twitter.com/jd1bly

[ANS thanks Ohio/Penn DX Bulletin No. 1155]

Registration for SA AMSAT Symposium Now Open

Registration for the SA AMSAT space symposium is now open. The symposium will be held on Saturday 24 May 2014 at the Innovation Hub in Pretoria. You get discounts for booking early and if you are an SARL or SA AMSAT member. Get all details on www.amsatsa.org.za

[ANS thanks the SARL NEWS SUNDAY 23 MARCH 2014]

New ISS Position weblink

ISS link where you can find live public data of the ISS yaw, pitch and roll angles:

http://spacestationlive.nasa.gov/displays/adcoDisplay2.html

[ANS thanks ARISS and Gaston, ON4WF for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership

information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org